

## PATENT

**REMARKS**

This reply is in response to the Office Action dated January 10, 2006. Claims 1, 5, 6, 14, 15, 27 and 29-39 are pending in the application and stand rejected. Applicant thanks the Examiner for granting and conducting a telephone interview on May 2, 2006. Applicant has separately submitted a statement of the substance of the interview to be filed for the record. Reconsideration of the claims is respectfully requested.

Claims 29, 30, 32-35 and 38 stand objected to for the use of the term "process component." Applicant submits that the term "process component," is widely accepted and used in the chemical and refining processing arts. The term "process component" is clearly described in the specification and refers to various kinds of process equipment including heat exchangers, vessels, pipes, and slurry settlers. See, specification at page 9, ll. 19-20; and at page 19, line 20 through page 20, line 9. Accordingly, withdrawal of the objection is respectfully requested.

Claims 32-34 and 38 stand objected to for the use of the term "process run." Applicant submits that the term "process run" is widely accepted by those having ordinary skill in the art and has been used for years in the chemical arts and patent literature. See, e.g. U.S. Patent Nos. 6,725,456 (claim 4); 5,231,222 (Example 1 referring to a continuous process to produce n-butyl acetate); and 4,900,856 (claim 7). Accordingly, withdrawal of the objection is respectfully requested.

Claims 29, 32-33 and 39 stand rejected under 35 U.S.C. § 112, first paragraph. Applicant respectfully traverses the rejection.

The claims, when viewed in light of the specification, more than "reasonably convey" to one of ordinary skill in the art that the electric charge can be continuous (*i.e.* non-intermittent). The specification is filled with terms like "keep," "prevention of fouling," "prevents fouling," and "minimizes fouling," which each imply or infer a continuous, on-going process. The following are just a few specific passages from the specification:

1. "The present invention relates generally to an apparatus and process for the prevention of fouling." (page 2, ll. 1-2);
2. "Application of an electric charge is used to afford a means to prevent fouling and to avoid the resulting downtime required to purge and regenerate fouled equipment" (page 2, ll. 4-6);

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3. "It is therefore the object of this invention to provide a method and apparatus for the prevention of fouling of heat exchangers by contaminant accumulation." (page 7, ll. 17-18);
4. "In a preferred embodiment, the method and apparatus prevents or minimizes fouling in complex liquid streams without the short coming of existing curative responses, interim measures, or complex apparatus." (page 7, ll. 18-21);
5. the applied charge "keeps surfaces free of contaminants" (See, e.g. the specification at page 9, ll. 8-10; page 12, line 12 through page 13, line 11; page 15, line 9; page 15, line 17; and page 20, line 5. One embodiment of an ongoing process is described at page 16, line 6 through page 17, line 21.)

In view of at least the foregoing excerpts of the specification, the claims, when read in light of Applicant's specification, more than reasonably convey to one of ordinary skill in the art that the Applicant had possession of the claimed invention at the time of filing. Particularly, the specification makes clear that the electric charge is applied constantly or continually to prevent fouling or to keep surfaces free of contaminants. Without the continually applied electric charge, the surfaces would not be "kept" free of contaminants nor would fouling be "prevented."

Withdrawal of the rejection and allowance of the claims is respectfully requested.

Claims 1, 6 and 27 stand rejected under 35 U.S.C. § 112, second paragraph. Regarding the word "continual," Applicant traverses the rejection on grounds stated above with regard to the 112, first paragraph rejection. Regarding the term "object," Applicant traverses the rejection on grounds that the term "object" is clear and unambiguous. The term "object" has a plain and ordinary meaning, and the term "object" is used consistently with that plain and ordinary meaning in the claims and in the specification. See, e.g. specification at page 12, ll. 13-17. Accordingly, withdrawal of the rejection and allowance of the claims is respectfully requested.

Claims 32 and 35-37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Carson (U.S. Patent No. 4,505,758) hereafter "Carson." Claims 33 and 39 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carson. The Examiner states that Carson teaches a process where electric current is continually applied over a time interval of less than 5 minutes.

Applicant respectfully traverses the rejection. According to Webster's New World Dictionary, the word "constant" means going on all the time; continual; persistent. A duration less than 5 minutes is not "on all the time; continual; persistent" or otherwise constant. Carson

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discloses a process for heating selected portions of a cooler for short periods of time, *i.e.* intermittent time intervals of less than 5 minutes as noted by the Examiner, not a continual or constant application of electric current. Therefore, Carson does not teach, show or suggest the claimed invention.

Furthermore, Carson teaches away from a constant (*i.e.* "continual" or "non-intermittent") application of electrical charge. Carson discloses an intermittent removal or cleaning process to melt paraffins that have solidified within a cooler. Carson uses the work from short, intermittent applications of voltage to remove or clean accumulated, solidified paraffins within a cooler. The work added in the form of heat is used to melt the paraffins that have solidified within the cooler. Any longer duration of such resistive heating would defeat the purpose of the cooler. Therefore, the application of the heat must be sporadic and intermittent, such as less than 5 minutes; otherwise, the cooler of Carson would not be satisfactory for its intended purpose which is to cool a process stream. As such, a reading of Carson teaches away from a continual, persistent or otherwise constant process.

Therefore, Carson does not teach, show or suggest the claimed invention, and one of ordinary skill in the art would not have been motivated to arrive at the claimed invention based on the teaching of Carson. For at least these reasons, withdrawal of the rejection and allowance of the claims is respectfully requested.

Claims 1, 5-6, 27, 29-31, 34 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carson in view of Harms (U.S. Patent No. 3,933,606) hereafter "Harms." The Examiner states that it would have been obvious "to modify the process of the Carson reference to include an electric charge magnitude adjustment step as taught in the Harms reference in order to effect a desired degree of contaminant removal in the fluid being treated."

Applicant respectfully traverses the rejection. Carson has been discussed and distinguished above. Harms discloses a water treatment process. Harms does not teach, show or suggest processing a hydrocarbon. Water and hydrocarbons are completely different in terms of polarity, physical properties, volatility and flammability, just to name a few significant differences. Therefore, there is no reasonable expectation from the references themselves that the process of Carson could be modified according to the teachings of Harms.

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Furthermore, such modification proposed by the Examiner is not motivated by a combination of Harms and Carson. As stated above, Carson uses the work from short, intermittent applications of voltage to remove or clean the accumulated, solidified paraffins within a cooler. An electric charge as a result of the applied voltage and resulting current would have no effect on the solidified paraffins. As a result, Carson has no use for electric charge and makes no reference to an electric charge. In fact, a "magnitude adjustment step" in Carson would have no effect on Carson's process of melting accumulated paraffins, which are non-polar. The Examiner is kindly reminded that electric charge is not synonymous and is not interchangeable with voltage and/or current.

The Examiner is also kindly reminded that the teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, not in the applicants' disclosure. See M.P.E.P. § 2143, citing In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991). Furthermore, the proposed modification cannot render the prior art unsatisfactory for its intended purpose. In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984). As discussed above, any longer duration of voltage to the cooler of Carson would impart too much heat and would render the cooler unsatisfactory for its intended purpose which is cooling a process stream. Also, Carson has no use for electric charge. Therefore, the Examiner has not established a *prima facie* case of obviousness in view of Carson and Harms. Insofar as the record shows, the only motivation to combine the teaching of Harms and Carson has been gleaned from the Applicant's own specification, which is nothing more than impermissible hindsight. Withdrawal of the rejection and allowance of the claims is respectfully requested.

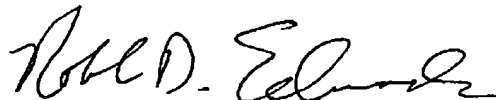
Additionally, it appears the Examiner's basis of rejection is simply an "obvious to try" standard. The Examiner is kindly reminded that obviousness is tested by what combined teachings of prior art references would have suggested to those of ordinary skill in art, not by whether particular combination of elements from such references might have been "obvious to try." In re Fine, USPQ2d 1596 (Fed. Cir. 1988). As discussed above, Carson is directed to melting non-polar paraffins from coolers and Harms is directed to water treatment. Electric charge is immaterial to Carson. Therefore, one having ordinary skill in the art would not have arrived at the claimed invention based on the combined teachings of Carson and Harms. Withdrawal of the rejection is requested.

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Claims 14-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carson in view of Harms, and further in view of Sivavec et al. (U.S. Patent 6,451,210) hereafter "Sivavec." The argument above regarding claim 1 equally applies to claims 14-15 since claims 14-15 each include the limitations of claim 1. Carson and Harms have been discussed and distinguished above. Sivavec adds nothing to the deficiencies of Carson and Harms. Accordingly, claims 14-15 are in condition for allowance for at least the same reasons stated above with regard to claim 1. Withdrawal of the rejection and allowance of the claims is respectfully requested.

Having addressed all issues set out in the office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction. A petition for extension of time for filing this response is attached.

Respectfully submitted,



Robb D. Edmonds  
Registration No. 46,681

EDMONDS, P.C.  
16815 Royal Crest Drive, Suite 130  
Houston, Texas 77058  
TEL: 281-480-2700  
FAX: 281-480-2701

ATTORNEY FOR APPLICANT